IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

ROKIOT USA, LLC, **Plaintiff,** **v.** **CLEARBLADE INC.,** **Defendant.**	**C.A. No. 23-893** **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Rokiot USA, LLC ("Rokiot") files this suit against Defendant ClearBlade Inc. ("ClearBlade") for infringement of U.S. Patent Nos. 7,895,257 and 8,631,063 (collectively, the "Asserted Patents").

Defendant ClearBlade infringes the Asserted Patents by providing, among other things, the ClearBlade Internet-of-Things ("IoT") and Edge platform and system used by companies "to ingest, analyze, adapt and act on any data in real-time and at extreme scale."[1]

[1] https://www.clearblade.com/wp-content/uploads/2020/07/ClearBlade-Platform-Brochure-v2.pdf.

THE PARTIES

1. Plaintiff and patent owner Rokiot is a Delaware limited liability company headquartered in Winters, Texas.

2. ClearBlade is a corporation organized and existing under the laws of Delaware and headquartered at 1701 Directors Blvd, Suite 250, Austin, Texas 78744. On information and belief, ClearBlade may be served through its registered agent, CEO Eric Simone, at 103 E. 5th St., Suite 203, Austin, Texas 78701 or Corporation Service Company, 251 Little Falls Drive, Wilmington, Delaware 19808.

3. Upon information and belief, ClearBlade is involved in the manufacture, sale, marketing and distribution of certain ClearBlade-branded software, hardware, and computing platforms in the United States, including those accused of infringement in this case. According to its website, "Clearblade was built as a universal platform, which makes it ideal for all IoT applications" including "smart buildings." https://www.clearblade.com/about/.

4. Years before ClearBlade was founded, Rokiot's founder, Dr. Sumi Helal, was an active pioneer in the IoT space. Among his many inventions, the Asserted Patents represent Dr. Helal's early work developing an IoT platform that enables integration of heterogeneous devices. ClearBlade practices Dr. Helal's inventions claimed in Rokiot's patents.

JURISDICTION AND VENUE

5. This is a patent suit brought under the United States Patent Act, namely 35 U.S.C. §§ 271, 281, 283, 284, and 285, among other laws. This Court has subject-matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338.

6. This Court has personal jurisdiction over ClearBlade because it has substantial, systematic, and continuous contacts within this judicial district. Defendant ClearBlade has offices and

facilities in this judicial district, including facilities in Austin, Texas.

7. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1400(b). Defendant ClearBlade resides in this district and has a regular and established place of business in Austin, Texas, and has committed acts of infringement in this judicial district.

8. Upon information and belief, ClearBlade places the products accused of infringement in this case in the stream of commerce with the knowledge, understanding, and expectation that such products will be sold in the state of Texas and in this judicial district.

9. Upon information and belief, a substantial part of the events giving rise to the claims alleged herein have occurred in this district in that ClearBlade has committed acts of infringement and/or acts that are accused of infringement in this case including manufacturing, marketing, selling, and/or offering for sale the products accused of infringement in this case.

BACKGROUND

A. PLAINTIFF ROKIOT

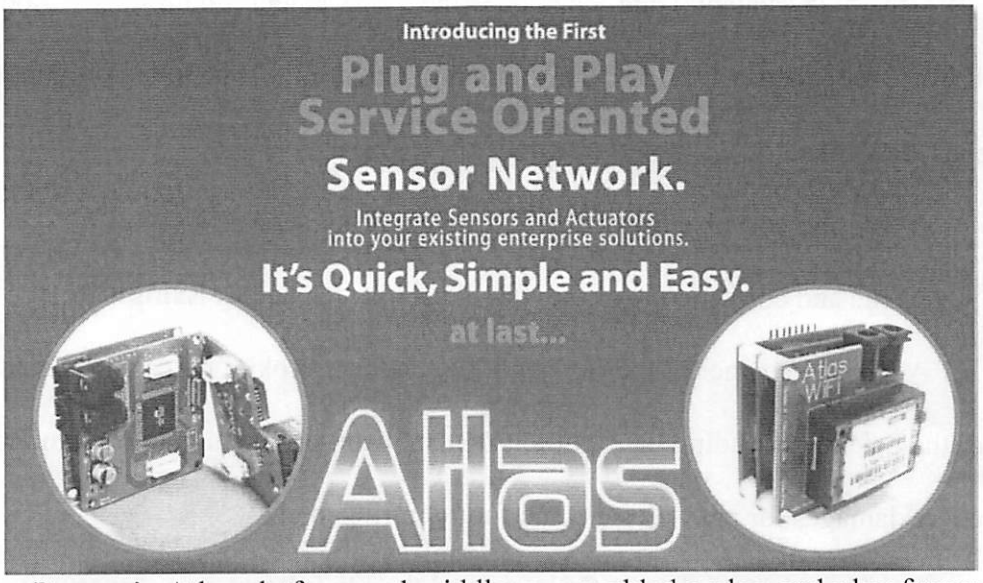
10. Rokiot was founded by and is controlled by Abdelsalam ("Sumi") Helal, Ph.D, a widely recognized pioneer of the IoT. Professor Helal is a senior faculty member in the Computer & Information Science and Engineering Department at the University of Florida and serves as Director of its Mobile and Pervasive Computing Laboratory. Dr. Helal is a Fellow of the ACM, IEEE, AAAS, AAIA, IET, and a member of Academia Europaea.

11. His active areas of research focus on architectural and programmability aspects of the IoT, service-oriented IoT architectures, IoT edge intelligence, and pervasive/ubiquitous systems and their human-centric applications, particularly in the Digital Health area.

12. At the University of Florida, Dr. Helal co-founded and directed the Gator Tech Smart House, a real-world deployment project aimed at identifying key barriers to and opportunities for implementing the Smart Home concept.

13. The Gator Tech Smart House was an experimental facility for applied research, development, and validation of IoT technology in the domains of elder care and digital health. It garnered widespread attention as a showcase of assistive technologies developed by Dr. Helal and his co-inventors that are enabled by the inventions claimed in the Asserted Patents. Notable features of the Gator Tech Smart House included a smart mailbox that sensed when mail arrived, window blinds that automatically controlled light and privacy, a smart bed that monitored sleep patterns, and a floor that tracked occupants' level of activity and detected a fall.

14. In 2006, Dr. Helal co-founded Pervasa, Inc., a University of Florida technology startup focused on commercializing the modular architecture successfully proven in the Gator Tech Smart House.



15. Pervasa's Atlas platform and middleware enabled a plug-and-play framework for sensor/actuator networks. Atlas devices appeared in the framework automatically as they were added and powered on. Atlas applications included smart homes, healthcare, and asset tracking.

16. In 2007, Pervasa won the Silver "Best of Sensor Expo Award" beating University of California Berkeley's Crossbow, which took the Bronze.

17. While he is a technologist at heart, Dr. Helal has founded ventures to commercialize IoT and Digital Health technologies and brought to market important inventions. The Patent Office recognized the efforts of Dr. Helal, and his co-inventors, King, Bose, Pickles, Russo, Ploeg, Zabadani, and Kouche, by awarding patents such as those infringed by ClearBlade that cover their novel IoT platform technologies. Leading technology companies have recognized Dr. Helal's inventions and licensed the patents protecting them.

18. The University of Florida assigned the patents-in-suit to the original inventors in

2013, and they assigned their interests to Rokiot in 2017.

B. THE ASSERTED PATENTS

19. Rokiot is the owner, by assignment, of all rights, title and interest to U.S. Patent Nos. 7,895,257 (the "'257 Patent") and 8,631,063 (the "'063 Patent") both titled "Modular Platform Enabling Heterogeneous Devices, Sensors, and Actuators to Integrate Automatically into Heterogeneous Networks."

20. A true and correct copy of the '257 Patent is attached as **Exhibit A**.

21. A true and correct copy of the '063 Patent is attached as **Exhibit B**.

22. As the sole owner of the '257 and '063 Patents, Rokiot holds all substantial rights in and under the patents, including the right to grant sublicenses, exclude others, and to enforce, sue, and recover damages for past, present, and future infringement.

23. The United States Patent Office issued the '257 Patent on February 22, 2011, and issued the '063 Patent on January 14, 2014.

24. The '257 and '063 Patents are valid, enforceable, and were duly issued in full compliance with Title 35 of the United States Code.

25. The Asserted Patents generally are directed to a platform for integrating heterogeneous devices (e.g., sensors and actuators) and applications. In pervasive computing spaces such as a smart home, industrial facility, or manufacturing plant, deployed actuators and sensors monitor an environment, condition or state; send and receive data; and respond to control signals typically sent remotely over a wireless network.

26. The specification of the Asserted Patents describes the applicability of the patented technology to remotely controlled appliances, lights, doors, coffee machines, temperature controls, home theater systems, communication systems, security cameras, surveillance equipment, and the

like. '063 Patent at 1:21-27.[2] Home automation systems, or "smart homes," provide the convenience of controlling systems from a central or remote location. *Id.* at 1:41-45. The Asserted Patents address problems related to deploying such systems and integrating new devices.

27. For example, previously, when a new device (e.g., a sensor or actuator) was added, developers had to undertake the tedious task of learning and accounting for characteristics related to operating, interfacing and communicating with, and configuring the device. '063 Patent at 2:30-33. New devices were physically integrated, configured, and tested within an overall system. Computer applications for the new device had to be written with knowledge of the resources assigned to connect the device, signals required to query the device, and the meaning of any signals returned to a centralized system from the device. *Id.* at 2:35-38. Any changes in the deployed device required repeating the configuration process. Moreover, once application software was developed, changes may require modification along the entire communication path from device to data repository to ensure interoperability.

28. In short, previous systems lacked a refined way of achieving "modularity" where the devices could be added to a system without extensive configuration overhead. In addition, previous systems that attempted to provide scalable solutions focused heavily on sensors (e.g., temperature sensors, pressure sensors) without sufficient regard for scaled integration of actuators.

29. The claimed subject matter of the Asserted Patents describes, among other things, scalable, reliable, and secure data ingestion (e.g., from sensors) and command and control messaging (e.g., to actuators). The Asserted Patents relate to platforms that provide a uniform interface to any type of sensor, actuator, or connected device. '063 Patent at 5:20-23.

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[2] The '063 Patent and '257 Patent share a specification. The Complaint cites to the '063 Patent, but parallel citations may be found in the '257 Patent.

30. By providing the capability to represent connected devices automatically as software services to programmers and users, a larger number of devices may be supported. '063 Patent at 4:8-30. The inventors recognized a "need for a modular, service-oriented sensor and actuator platform specifically designed to support the development of scalable pervasive computing spaces." *Id.* at 4:28-30. They further recognized that "development of smart spaces is very different in goals and requirements from the typical sensor network application." *Id.* at 5:21-22.

31. Describing generally an embodiment of the claimed subject matter, the inventors noted that "manual integration of sensors and actuators is preferably replaced by a scalable, plug-and-play mechanism . . . [such that] the smart space is preferably assembled programmatically by software developers instead of hard- wired by engineers and system integrators . . . allow[ing] for cost-effective development, enabl[ing] extensibility, and simplif[ying] change management." '063 Patent at 5:21-29. In a preferred embodiment described in the specification, "a pervasive space exists as both a runtime environment and a software library." *Id.* at 5:32-33.

32. Benefits provided by the claimed inventions include: (i) interchangeability of various sensors and actuators without the need for cumbersome reworking of the platform and/or associated software; (ii) enabling users of the platform to control, and interact with, the sensors and actuators in a higher-level language without the need to program at the hardware level of the devices; and (iii) interchangeability of the hardware modules (e.g., one communication module can be interchanged with another to allow for the use of different networking technologies without reworking of other modules). '063 Patent at 5:52-63.

33. Components of a disclosed embodiment include a hardware platform, a middleware module, and one or more "software services" that represent an active object. In the normal opera-

tion described in the Asserted Patents, the hardware platform communicates with at least two active objects, where at least one active object is an actuator and one active object is a sensor.

34. Those skilled in the art understand that the Internet-of-Things generally categorizes "Things" as sensors or actuators. Sensors provide information about a particular domain, supplying data to the system about the current state of the space. In general, sensors create data, usually by providing measurements or telemetry. Actuators are active objects that alter a space. Typically, actuators accept commands to perform certain functions.

35. The specification of the Asserted Patents describes sensors and actuators as "the foundations of a pervasive space, as they provide the means for gathering information about the state of the space and for controlling devices that can modify the state of the space." '063 Patent at 6:47-53.

36. In one embodiment described in the Asserted Patents, the platform connects numerous and heterogeneous sensors and actuators to the services and applications that monitor and control the space. As shown in Figure 7 of the Asserted Patents (below), information flows through, for example, node 54 and middleware 10. Each node may be given a unique identifier, and when a node

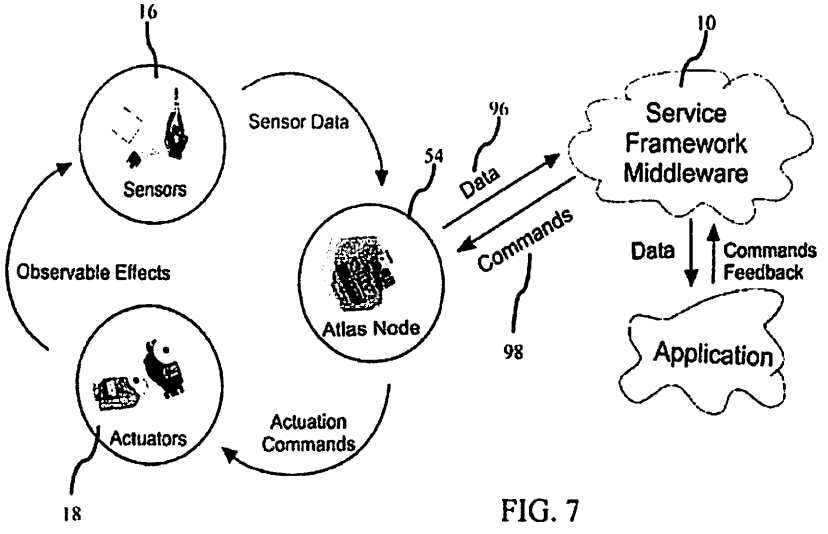


FIG. 7

comes online it sends its identification or other data 96 to the middleware 10. When this is acknowledged, the middleware may send a driver bundle 98 for the attached devices 16, 18, and, after this, the application function loops, handling any incoming network packets, periodically sampling the sensors 16, sending signals to actuators 18, transmitting sensor data, and sleeping. As illustrated in Figure 7, commands flow to actuators and data flows from sensors.

37. As expressed in claim 1 of the '063 Patent, an embodiment of the claimed subject matter includes a middleware module that generates one or more software services for each of at least two active objects, receives commands from one or more applications written in a high-level language via the software services, converts commands into low-level commands (capable of controlling the active objects and that can be understood by the active objects), and transmits low-level commands to active objects via a hardware platform.

38. Further according to '063 Patent claim 1, a hardware platform receives raw data from at least one active object and passes it to a middleware module. In turn, the middleware module converts raw data into usable data and passes it to the software service for that active object. The specification describes higher-level application software receiving useable data from a particular active object's software service.

39. According to the specification, interchangeability of sensors and actuators without the need for cumbersome reworking of the platform or associated software is a benefit of the claimed subject matter. '063 Patent at 5:52-63. In an exemplary embodiment, hardware platforms, connected devices, and associated software services appear as a single, homogeneous environment even if the actual environment comprises heterogeneous networks or devices. '063 Patent at 7:36-40. This functionality enables users of the platform to control and interact with "Things" in a higher-level language, obviating the need to program (or communicate with) each Thing at the

device's hardware level.

40. Another described advantage lies in the interchangeability of hardware modules. For example, one communication module can be interchanged with another to allow for the use of one networking technology or another without reworking other modules. '063 Patent at 5:52-63.

41. As described in the Asserted Patents, programming an intelligent space involves at least three activities: (i) context engineering, which involves interpreting sensory data; (ii) software engineering, which includes describing the behavior of various software components; and (iii) associating behavior with context, which includes defining which pieces of software can execute in a particular context and which pieces the system should invoke upon a contextual change. '063 Patent at 6:14-21.

42. In the Asserted Patents, Figure 1 is a schematic view of one embodiment of a middleware architecture for programmable pervasive spaces (*see, e.g.*, '063 Patent at 7:48-8:38) built

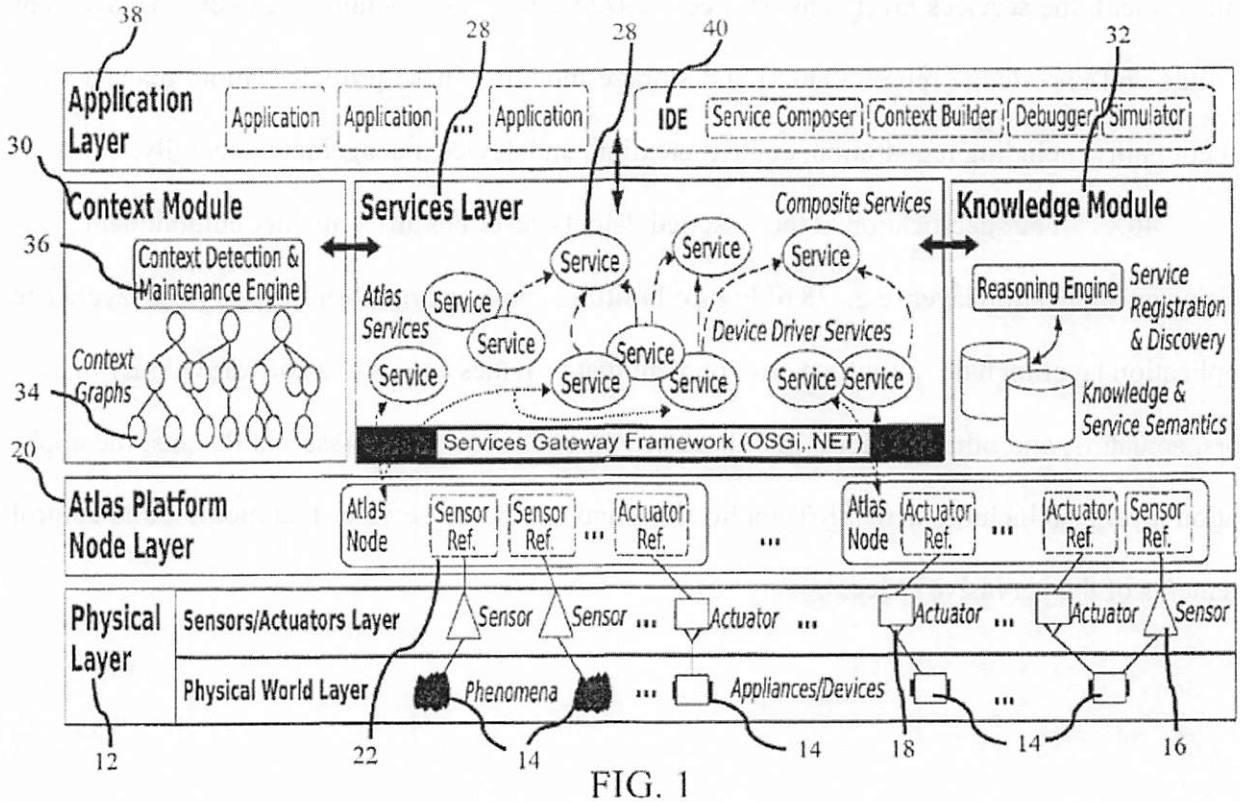


FIG. 1

using the platform of the claimed subject matter.

43. As shown in physical layer 12 of Figure 1, various phenomena, appliances, and devices are active objects captured through actuators and sensors into the smart space for observation and control.

44. Above the physical layer in the representation of Figure 1, the Atlas Platform Node Layer 20 (i.e., the platform layer) contains sensor and actuator platform nodes that automatically integrate the sensors and actuators and hence their respective active objects and export their service representations to the layers above. Sensors/actuators in the physical environment are represented as one or more software services that can be programmed or composed into other services. Thus, the physical world is represented as a set of software services to programmers.

45. Above the platform layer in Figure 1 is the services layer (e.g., 28 of Figure 1), which holds the registry of software service representations of the sensors and actuators. In one embodiment, the services layer runs on a centralized server and contains a context management module and knowledge representation and storage module. These provide remote management functionality including registration, context creation, and device management generally.

46. The specification of the Asserted Patents describes an exemplary embodiment comprising an application layer (e.g., 38 of Figure 1) sitting above the platform and services layer. The application layer includes a runtime environment that provides access to a software library of sensors, actuators, and other services. In a disclosed embodiment of the Asserted Patents, the application layer also includes actual IoT applications and composed services that monitor and control elements of the pervasive space.

47. In another disclosed embodiment, the platform represents any attached object in an IoT space as a Java program and the object is represented as an OSGi service bundle. The middleware framework in such an embodiment is shown in Figure 8 of the Asserted Patents.

48. With reference to the embodiment of Figure 8 (above), the specification describes

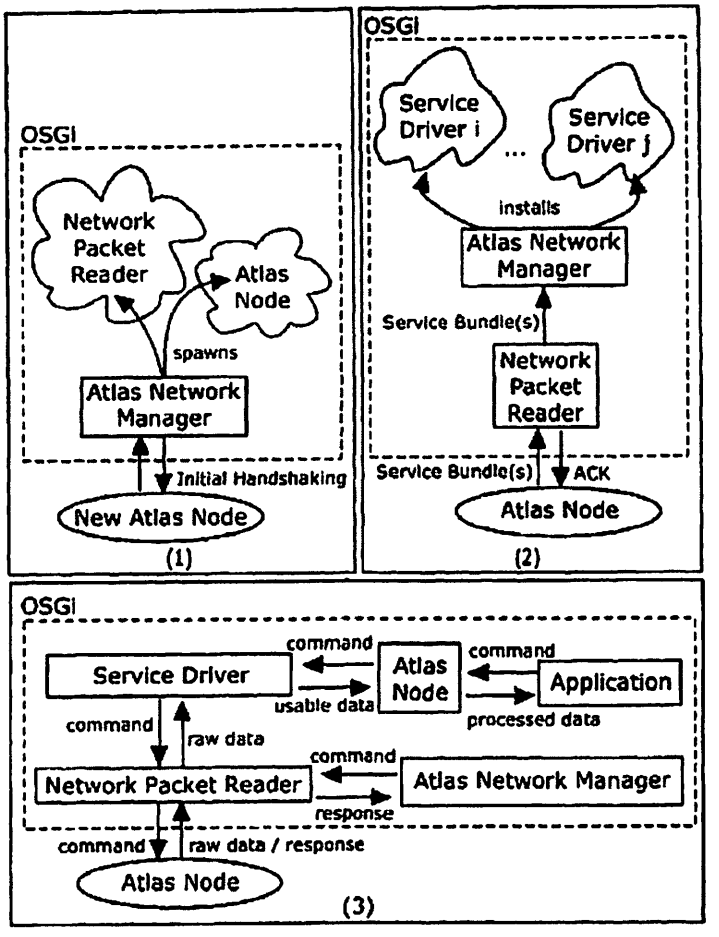


FIG. 8

registering and hosting software services in an industry-standard service framework such as the Open Services Gateway initiative (OSGi) standard specifications that are governed by the OSGi Alliance.

49. The OSGi Alliance develops and promotes open specifications that enable the modular assembly of software built with Java technology.

50. In an exemplary embodiment of the Asserted Patents, a driver represents each of the hardware sensors, actuators, or other devices connected to the platform as one or more software services on a software interface such as the middleware. These services are then made available to client programs or users through the middleware, for example, by applications or other services. '063 Patent at 13:53-58. Thus, in such an embodiment, each software service, regardless of the type of associated device, complies with a standard interface, such as the middleware, and can be discovered and accessed through this interface by applications and other services using standard mechanisms such as those provided by the standards-based service framework.

C. DEFENDANT CLEARBLADE

51. ClearBlade makes, uses, sells, offers for sale, licenses, tests, develops, and/or distributes ClearBlade IoT platforms and systems that embody the asserted claims of Rokiot's Asserted Patents.

52. ClearBlade's IoT platform and systems include the IoT Core, IoT Enterprise, IoT Edge, Intelligent Assets, and ClearRail products. ClearBlade markets the IoT Core, IoT Enterprise, IoT Edge, Intelligent Assets, and ClearRail products and describes these products on its website https://www.clearblade.com/#\. According to ClearBlade, "ClearBlade is driving enterprise digital transformation with IoT and Edge technologies."[3] ClearBlade provides products and services for business/industrial automation and other IoT functionality and connectivity as described herein. ClearBlade's products are used to, among other things, make "smart" business and industrial sites where lights, locks, appliances, and so on are computer monitored and controlled.

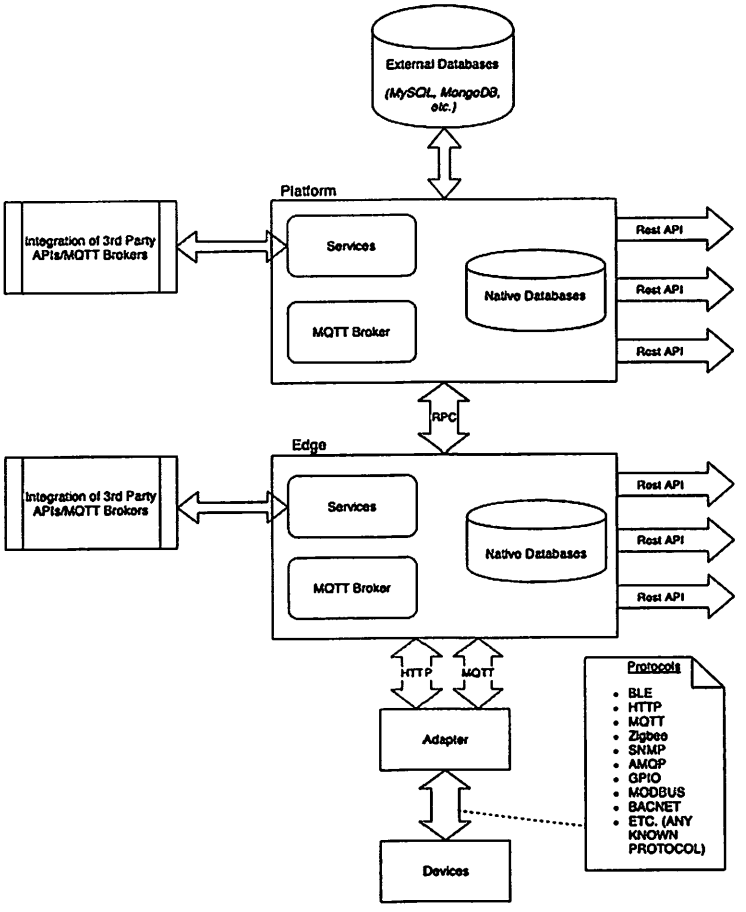
53. ClearBlade states that "ClearBlade™ is the enterprise Internet of Things platform

[3] https://www.clearblade.com/.

to rapidly engineer and run real-time, scalable Industrial IoT applications."[4]

54. The Edge component of ClearBlade's offering "allows users to process, analyze and perform actions on the data" and "is an application to synchronize, configure, manage, and deploy IoT systems. It is designed to perform well on a constrained hardware platform and be managed and updated remotely post-deployment."[5]

55. The Platform component of ClearBlade's offering is shown below in relation to the Edge component.



[4] https://docs.clearblade.com/v/4/introduction/.

[5] https://docs.clearblade.com/v/4/introduction/.

See https://docs.clearblade.com/v/4/platform/. The overall connectivity of the components allows the devices to communicate and exchange data locally and remotely. ClearBlade provides the infrastructure for its products to communicate. Example infrastructure includes cloud-based servers, local hubs, and associated platforms.

56. ClearBlade provides products, infrastructure and services including servers, cloud-server infrastructure, IoT gateways, hubs, middleware, software, hardware, drivers, and interfaces to facilitate communication between IoT devices (e.g., user equipment) and software applications in various infringing combinations for uses such as those described herein. For convenience, these accused instrumentalities (e.g., including any combination of components) may be referred to herein as the (or ClearBlade's) "IoT System" or ClearBlade's "IoT products" or "IoT systems."

57. ClearBlade makes, uses, sells, offers for sale, licenses, tests, develops, and/or distributes systems including the products and infrastructure (e.g., hardware platform, IoT cloud products and service), hubs, apps, kits, and automation systems as described herein.

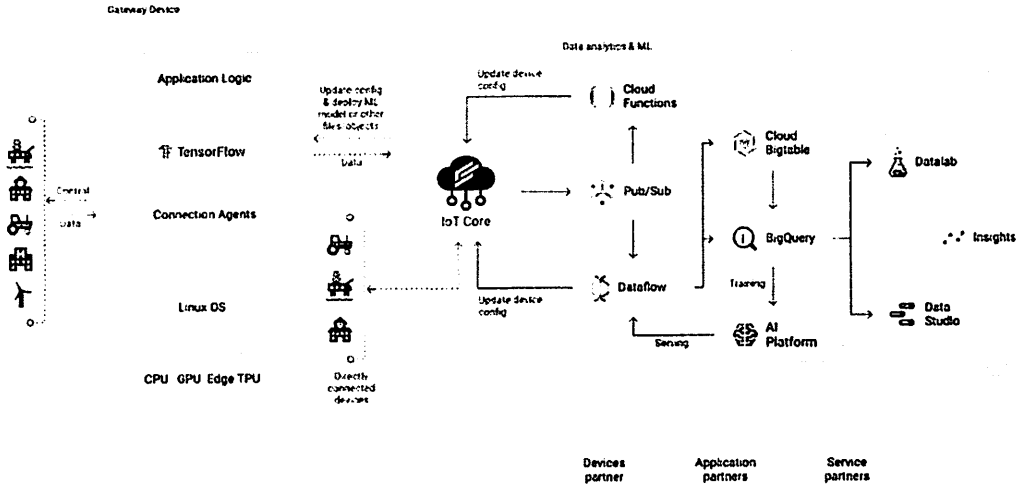
58. ClearBlade's IoT systems practice the asserted claims of the '063 and '257 Patents.

59. ClearBlade owns, operates, maintains, and/or controls (either directly or through a wholly owned subsidiary) the www.clearblade.com domain and makes information about the products accused of infringement herein available. For example, ClearBlade publishes information about its IoT products and services at www.clearblade.comand docs.clearblade.com/v/4/._Rokiot hereby incorporates by reference the ClearBlade IoT System-related content of the domains (and sub-domains) and web pages (and linked web pages) referenced above.

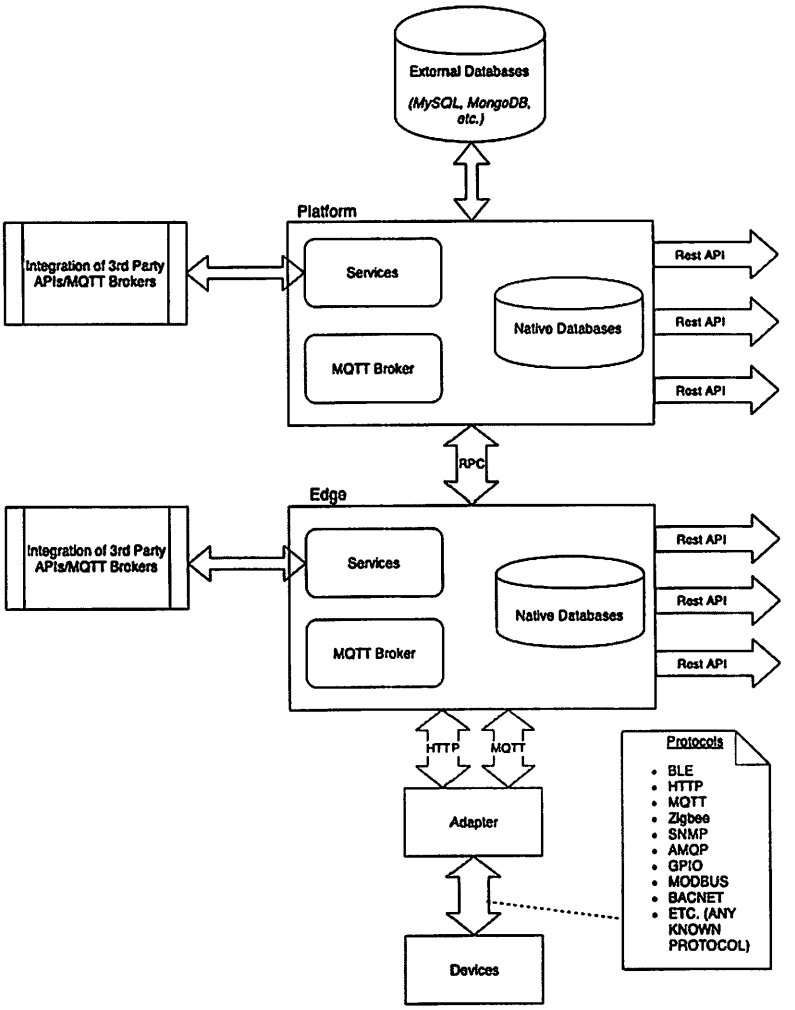
HARDWARE PLATFORM WITH MIDDLEWARE MODULE

60. ClearBlade's IoT System includes servers, cloud-server infrastructure, IoT gate-

ways, hubs, middleware, software, hardware, drivers, and interfaces. ClearBlade provides architecture diagrams of its system.



See https://www.clearblade.com/iot-core/. This diagram reflects an overview of the ClearBlade system including objects such as sensors and actuators (on the far left) and components of ClearBlade's hardware and software platforms including middleware. The diagram below further depicts ClearBlade's hardware and software platforms including middleware.



See https://docs.clearblade.com/v/4/platform/. The ClearBlade IoT system's middleware intermediates between the active objects (e.g., devices) and applications such as cloud applications.

61. Claims 1, 16 and 20 of the '063 Patent and claims 1 and 17 of the '257 Patent relate to systems with a middleware module executing on a hardware platform. Hardware platforms covered by these claims communicate with active objects (e.g., devices).

62. The accused ClearBlade IoT System comprises a hardware platform (e.g., Edge and Platform components including Gateway Devices and cloud/server infrastructure) on which at least one middleware module executes to enable communication with active objects having sensors and/or actuators. Specific instances and examples of these structures are described above and

throughout this Complaint.

ACTIVE OBJECTS – ACTUATORS AND SENSORS

63. ClearBlade's IoT System includes active objects that include sensors and actuators. ClearBlade states that "[d]evices are producers and consumers of ClearBlade IoT Platform resources. Often, they are sensors that generate data, that is then processed by the ClearBlade Edge or Platform. In other cases, a device may be a hardware controller, which consumes commands and controls a motor or actuator."[6] ClearBlade provides direction to its customers for creating and configuring devices. *See, e.g.*, https://docs.clearblade.com/v/4/devices/tutorial/; https://www.clearblade.com/blog/guide-quickly-deploy-iot-solutions-clearblade-edge/; https://www.youtube.com/watch?v=TGnLpqxaPbk; https://www.youtube.com/playlist?list=PLgm8j45T6fQxI4W2TkBspbnQfuAHX5a_z (ClearBlade Docs Video Library).

64. Systems embodying claim 1 of the '063 Patent interact with active objects that have actuators.

65. Systems embodying claim 1 of the '257 Patent are adapted to communicate with or interact with an active object with a sensor and another active object with an actuator, and the systems of claim 16 of the '063 Patent interact with active objects having both sensors and actuators.

SOFTWARE SERVICE

66. In systems embodying claims 1, 16, and/or 20 of the '063 Patent or claim 1 of the

[6] https://docs.clearblade.com/v/4/devices/.

'257 Patent, for each active object, ClearBlade's middleware generates software services that represent active objects. For example, ClearBlade's middleware will generate a software device or "digital twin" of each active object in the IoT System.

https://docs.clearblade.com/v/4/devices/tutorial/; *see also* https://www.clearblade.com/blog/guide-quickly-deploy-iot-solutions-clearblade-edge/; https://www.youtube.com/watch?v=TGnLpqxaPbk; https://www.youtube.com/playlist?list=PLgm8j45T6fQxI4W2TkBspbnQfuAHX5a_z (ClearBlade Docs Video Library).

67. Similarly, in systems embodying claims 16 or 20 of the '063 Patent or claims 1 or 17 of the '257 Patent, software services are generated to represent active objects, where generating the software services is based on a received driver that includes information and behavioral components of the active objects.

68. Claim 20 of the '063 Patent and claim 17 of the '257 Patent similarly cover, for additional active objects, generating additional software services based on additional drivers that are received.

69. In ClearBlade's IoT Systems, a software "device" is a software service generated by the middleware module. The IoT Platform creates a Software Service for compatible devices.

See https://youtube.com/watch?v=WGKTLFPMtAE&t=276s ("We'll pick that off the entire device table always deployed and sync. This means all the devices, the shadows, whatever you call them, will always be in sync from the edges to the actual platform."); https://www.youtube.com/playlist?list=PLgm8j45T6fQxI4W2TkBspbnQfuAHX5a_z (ClearBlade Docs Video Library).

DRIVERS

70. Claims 16 and 20 of the '063 Patent and claim 17 of the '257 Patent relate to embodiments that include method steps or instructions for receiving a driver that has information and behavioral components for interacting with an active object (e.g., actuator and/or sensor device) connected to a hardware platform.

71. Claim 20 of the '063 Patent covers embodiments that receive (or have instructions for receiving) an additional driver (that includes information and behavioral components required to interact with an additional active object).

72. In the accused systems, the ClearBlade IoT System provides drivers (e.g., Device Types and Type Schemas) that include information and behavioral components for interacting with devices including sensors and actuators.

https://www.clearblade.com/blog/device-adminstration-edge-computing-technical-blog-series-demo/.

APPLICATIONS WRITTEN IN HIGHER LEVEL LANGUAGE

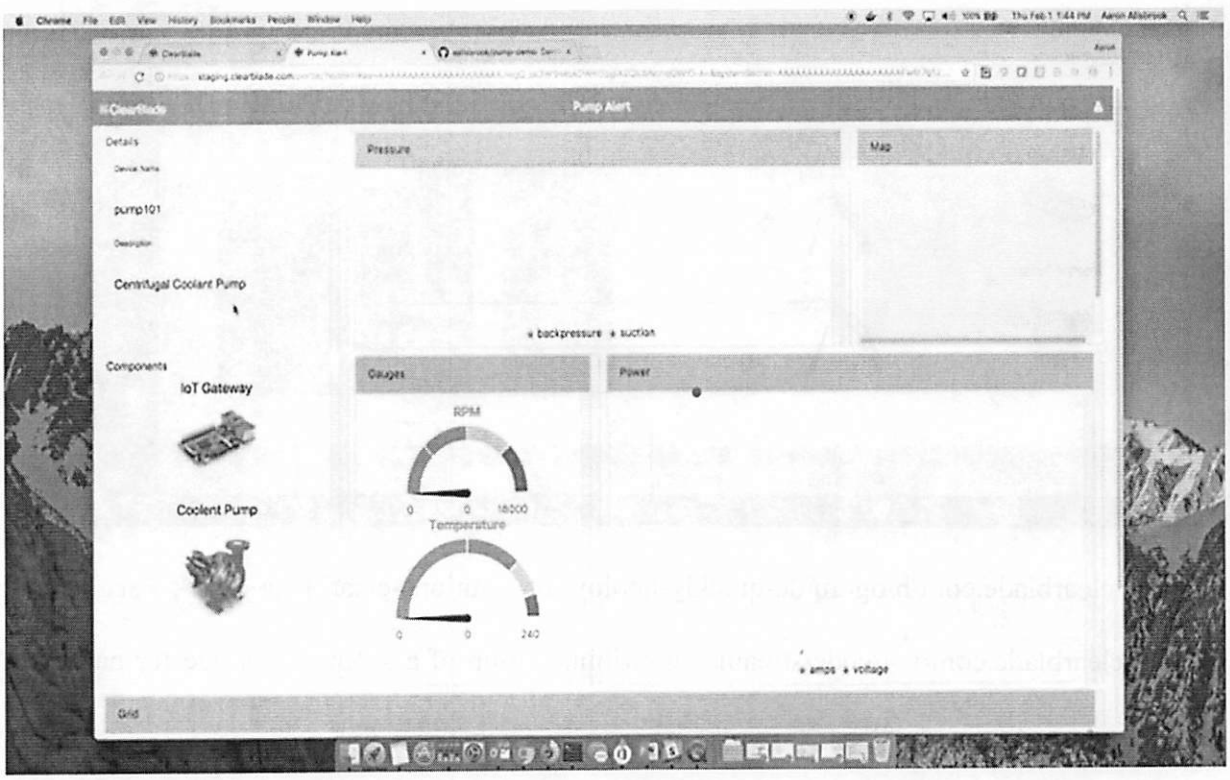
73. Claim 1 of the '257 Patent relates to systems with one or more applications written in a higher-level language. The applications are configured to receive useable data from at least one software service.

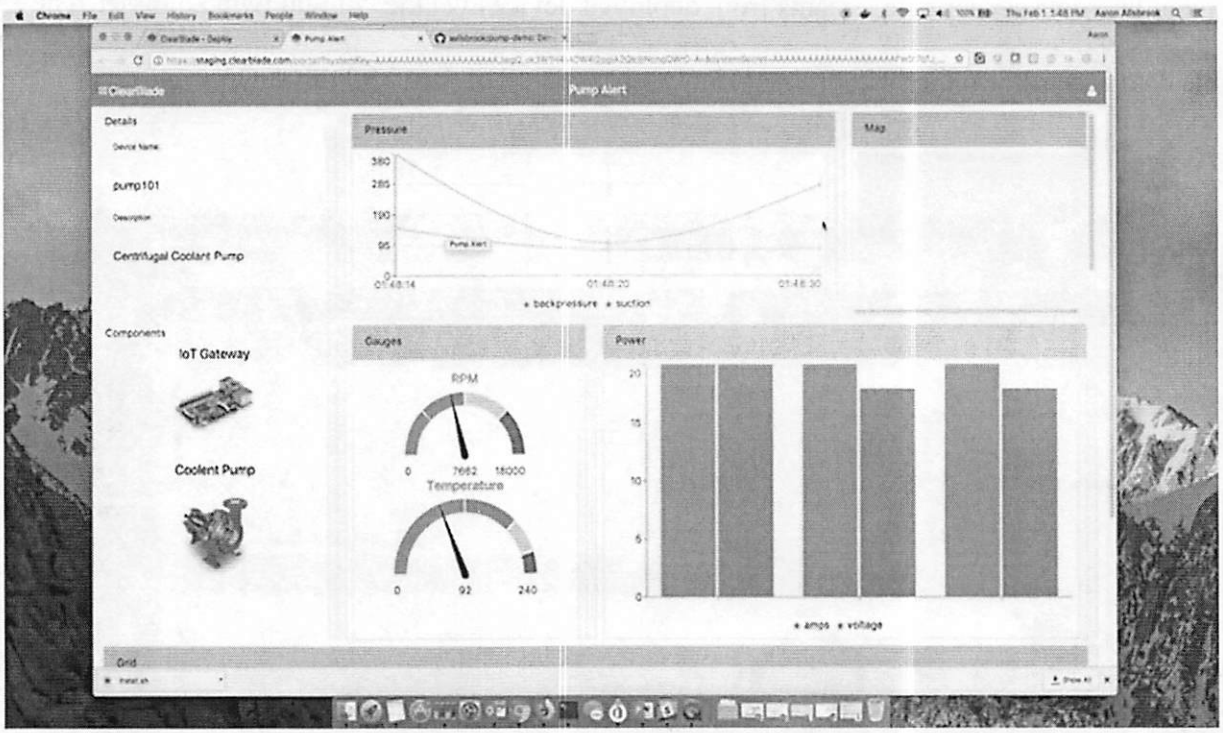
74. In systems that embody claim 1 of the '063 Patent or claim 1 of the '257 Patent, middleware receives a command from an application (written in a higher-level language) via the software service that represents the active objects.

75. Similarly, an embodied system of claim 16 of the '063 Patent or claim 2 of the '257 Patent receives (via the software service) one or more commands from an application written in a higher-level language.

76. The ClearBlade IoT System includes applications configured to receive useable

data including data sensor data streams from deployed devices via the "digital twin" or asset. The useable data is sent from the twin or asset via, for example, REST or MQTT. An example appears below.





https://www.clearblade.com/blog/guide-quickly-deploy-iot-solutions-clearblade-edge/; *see also* https://docs.clearblade.com/v/4/code/stream/ (describing set-up of a software service for handling requests).

CONVERT TO LOW-LEVEL COMMANDS

77. In a system embodying '063 Patent claim 1 or claim 1 of the '257 Patent, middleware converts the commands into low-level commands that can be understood by the active objects.

78. Similarly, a system embodying claim 16 of the '063 Patent converts commands received from a higher-level language application into more low-level commands capable of controlling the operation of the active object.

79. The ClearBlade IoT System converts commands into low-level commands that can be understood by the active object. For example, ClearBlade states that the ClearBlade IoT System is an adaptable and capable deployment across a number of different protocols and integrations.

ADAPTABLE DEPLOYMENT

ClearBlade connects all your gateways, clouds, and devices across numerous protocols.

Protocols

- CoAP
- ZigBee
- BlueTooth
- ZeroMQ
- AMQP
- OPC-UA
- And others

Integrations

- Data
- Messaging
- Code
- Triggers
- Portals

https://www.clearblade.com/clearblade-edge-platform/.

Adapters

Introduction

An Adapter is a custom software component that is deployed on IoT Gateway devices executing the ClearBlade Edge.

Each Adapter consists of a name, a small number of administrative commands, and a small number of files comprising the administrative and executable assets of an adapter. The files comprising an adapter will consist of executable code and supporting libraries as well as shell scripts used to administer adapters.

To learn how to create and configure an adapter, click **here**

Purpose

To serve as a proxy between the ClearBlade platform and IoT devices that cannot directly communicate with the ClearBlade Platform. ClearBlade provides various adapters out-of-the-box for different type of protocols like BLE, Modbus, Bacnet, Canbus, ZMQ, AMQP, xDot etc. Checkout ClearBlade's Github

https://docs.clearblade.com/v/4/adapters/.

80. The ClearBlade IoT System transmits low-level commands to an active object via the hardware platform, wherein the low-level commands are capable of controlling the active object.

RAW DATA RECEIPT AND CONVERSION

81. Claim 2 of the '063 Patent and claim 1 of '257 Patent relate to systems in which an active object includes a sensor. For claim 2 of the '063 Patent and claims 1 and 3 of the '257 Patent, the hardware platform receives raw data from active objects and passes the raw data to the middleware module. In turn, for claim 2 of the '063 Patent and for claim 1 of the '257 Patent, the middleware module converts the raw data into useable data (useable by higher-level language applications) and passes the useable data to the software service for the active object.

82. For claim 16 of the '063 Patent and/or claim 17 of the '257 Patent, systems embodying one or both claims receive raw data from an active object via the hardware platform, convert the raw data into useable data, and pass the useable data to a second software service (which is written in a higher-level language). For claim 16 of the '063 Patent and claim 17 of the '257 Patent, the usable data can be used by a second application (which is configured to receive the useable data from the second software service).

83. For claim 20 of the '063 Patent, an embodying system receives raw data from an additional active object via the hardware platform, converts the second raw data into second useable data, passes the second useable data to the additional software service. In turn, the second useable data can be used by the second application written in a higher-level language. The second application is configured to receive a second useable data from the additional software service.

84. These claims are satisfied by the ClearBlade IoT System as described above.

COUNT I

INFRINGEMENT OF U.S. PATENT NO. 7,895,257

85. Rokiot incorporates the preceding paragraphs herein by reference.

86. ClearBlade jointly (with, for example, its customers and partners) and individually practices the '257 Patent by providing, testing, using, distributing, developing, making, selling, offering for sale, and/or licensing the accused instrumentalities without consent or authorization.

87. The facts alleged above including the referenced publicly available materials published by ClearBlade show that ClearBlade practices each and every element or step of at least claims 1, 2, 3, 4, 13, 14, 16, 17, 18, 27, 28, 32, 33, 34, and 35 of the '257 Patent.

88. ClearBlade has known about the '257 Patent and how the accused instrumentalities infringe since at least December 1, 2022. Rokiot and ClearBlade have engaged in pre-filing licensing discussions. ClearBlade has further notice and knowledge of the '257 Patent by this Complaint.

89. ClearBlade directly infringes each and every asserted claim literally, and to the extent an element or step is found not to be literally met by or in the accused instrumentalities, it is met under the doctrine of equivalents.

90. ClearBlade individually and jointly (with, for example, its customers and partners) infringes the '257 Patent. To the extent all steps or limitations of any asserted claim are not practiced by a single entity, then all steps or limitations, as the case may be, are practiced by, controlled by, or attributable to ClearBlade.

91. ClearBlade conditions its customers' receipt of ClearBlade's services upon the integration and/or incorporation of ClearBlade's software and scripts (e.g., ClearBlade Edge Platform software) and dictates the manner and timing of performance (e.g., pursuant to ClearBlade's APIs and SDKs) to direct and control the performance of processes that practice the subject matter

claimed in the '257 Patent.

92. ClearBlade's continued acts of infringement—including inducing, encouraging, aiding, abetting, directing, and instructing others, namely its customers, developers, and end users of the accused instrumentalities, including by providing user guides, instruction materials and customer support, to practice the '257 Patent—constitutes indirect infringement under 35 U.S.C. §§ 271(b)-(c).

93. ClearBlade provides, makes, sells, uses, licenses, offers to sell, and promotes the ClearBlade IoT System and platform and the specifically accused products having features and functionality described herein with the specific intent that end users and customers use the accused instrumentalities in an infringing manner on and in conjunction with the ClearBlade IoT System and platform.

94. As alleged herein, the ClearBlade IoT System and components are material to practicing the '257 Patent, have no substantial non-infringing use, and are known to ClearBlade by notice to be especially made or adapted for use in infringing the '257 Patent.

95. Rokiot has been harmed as a result of ClearBlade's infringing conduct. ClearBlade is liable to Rokiot in an amount that adequately compensates it for ClearBlade's infringement, which compensation cannot be less than a reasonable royalty together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT II

INFRINGEMENT OF U.S. PATENT NO. 8,631,063

96. Rokiot incorporates the preceding paragraphs herein by reference.

97. ClearBlade jointly (with, for example, its customers and partners) and individually practices the '063 Patent by providing, testing, using, distributing, developing, making, selling,

offering for sale, and/or licensing the accused instrumentalities without consent or authorization.

98. The facts alleged above and publicly available materials published by ClearBlade show that ClearBlade practices each and every element or step of at least claims 1, 2, 3, 9, 12, 13, 16, 17, 18, 19, 20, 21, 24, 30, 31, 35, 37, 38 of the '063 Patent.

99. ClearBlade has known about the '063 Patent and how the accused instrumentalities infringe since at least December 1, 2022. Rokiot and ClearBlade have engaged in pre-filing licensing discussions. ClearBlade has further notice and knowledge of the '063 Patent by this Complaint.

100. ClearBlade directly infringes each and every asserted claim literally, and to the extent an element or step is found not to be literally met by or in the accused instrumentalities, it is met under the doctrine of equivalents.

101. ClearBlade individually and jointly (with, for example, its customers and partners) infringes the '063 Patent. To the extent all steps or limitations of any asserted claim are not practiced by single entity, then all steps or limitations, as the case may be, are practiced by, controlled by, or attributable to ClearBlade.

102. ClearBlade conditions its customers' receipt of ClearBlades' services upon the integration and/or incorporation of ClearBlade's software and scripts (e.g., ClearBlade Edge Platform software) and ClearBlade dictates the manner and timing of performance (e.g., pursuant to the ClearBlade's APIs and SDKs) to direct and control the performance of processes that practice the subject matter claimed in the '063 Patent.

103. ClearBlade's continued acts of infringement—including inducing, encouraging, aiding, abetting, directing, and instructing others, namely ClearBlade's customers, developers, and end users of the accused instrumentalities, including by providing user guides, instruction materials and customer support, to practice the '063 Patent—constitutes indirect infringement under 35

U.S.C. §§ 271(b)-(c).

104. ClearBlade provides, makes, sells, uses, licenses, offers to sell, and promotes the ClearBlade IoT System and platform and the specifically accused products having features and functionality described herein with the specific intent that end users and customers use the accused instrumentalities in an infringing manner on and in conjunction with the ClearBlade IoT System and platform.

105. As alleged herein, the ClearBlade IoT System and components are material to practicing the '063 Patent, have no substantial non-infringing use, and are known to ClearBlade by notice to be especially made or adapted for use in infringing the '063 Patent.

106. Rokiot has been harmed as a result of ClearBlade's infringing conduct. ClearBlade is liable to Rokiot in an amount that adequately compensates it for ClearBlade's infringement, which compensation cannot be less than a reasonable royalty together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

NOTICE

107. Rokiot has complied with the notice requirements of 35 U.S.C. § 287 and provided actual notice of infringement prior to filing this Complaint.

JURY DEMAND

108. Rokiot hereby demands a trial by jury on all claims, issues, and damages so triable.

PRAYER FOR RELIEF

109. Rokiot prays for the following relief:

(a) That ClearBlade be summoned to appear and answer;

(b) That the Court enter an order declaring that ClearBlade has infringed the '257 and

'063 Patents;

(c) That the Court find this to be an exceptional case under 35 U.S.C. § 285, and award Rokiot its reasonable attorney's fees;

(d) That the Court grant and award Rokiot judgment against Defendant for all actual, compensatory, consequential, special, punitive, exemplary, increased, and/or statutory damages, including any applicable additional damages pursuant to 35 U.S.C. § 284, and, if necessary, an accounting of all damages; pre- and post-judgment interest as allowed by law; ongoing, post-judgment damages; and reasonable attorneys' fees, costs, and expenses incurred in this action; and

(e) That Rokiot be granted such other and further relief as the Court may deem just and proper under the circumstances.

Dated: July 31, 2023

Respectfully submitted,

/s/ Christopher T. Bovenkamp

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